



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,353	09/09/2003	Farni Weaver	2285	2116
28005	7590	11/30/2005	EXAMINER	
SPRINT 6391 SPRINT PARKWAY KSOPHT0101-Z2100 OVERLAND PARK, KS 66251-2100			KHAN, SUHAIL	
			ART UNIT	PAPER NUMBER
			2686	

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,353	WEAVER ET AL.	
	Examiner	Art. Unit	
	Suhail Khan	2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,9,10,21,23-26,28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,9,10,21,23-26,28 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 3 objected to because of the following informalities: no antecedent basis for 'the network entity'. It is suggested that 'the network entity' be replaced with 'a network entity'.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 10, 21, 25-26 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. App. Pub. No. 2004/0203855 to Veerasamy et al, in view of U.S. Pat. App. Pub. No. 2002/0090947 to Brooks et al.

Referring to **claim 1**, Veerasamy et al disclose a wireless communication system in which a mobile station engages in a call via air interface communication with a base station (page 2, paragraph 24, mobile stations, base stations), a method comprising: making a determination that the call has been dropped (page 3, paragraph 33, drop); and responsively determining a call-drop location of the mobile station (page 3, paragraph 34, call drop position), wherein the wireless communication system comprises position determining equipment (PDE) (page 3, paragraph 34, GPS); and wherein determining the call-drop location comprises the base station sending a position request to the PDE to determine the location of the mobile station, the position request including a mobile identification number (MIN) identifying the mobile station (page 5, paragraph 61, BS transmits control message with REPORT CALL DROP; page 3,

Art Unit: 2686

paragraph 34, mobile station equipped with GPS; it is inherent that the request includes the mobile identification number as the GPS is in the mobile station for which the position is desired). Veerasamy et al do not disclose that the base station makes a determination that the call has been dropped. The examiner maintains that the concept that the base station makes a determination that the call has been dropped was well known in the art as taught by Brooks et al.

In a similar field of endeavor, Brooks et al show that the base station can determine that a call was dropped (page 2, paragraph 21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show in a wireless communication system in which a mobile station engages in a call via air interface communication with a base station, a method comprising: the base station making a determination that the call has been dropped; and responsively determining a call-drop location of the mobile station, wherein the wireless communication system comprises position determining equipment (PDE); and wherein determining the call-drop location comprises the base station sending a position request to the PDE to determine the location of the mobile station, the position request including a mobile identification number (MIN) identifying the mobile station, as taught by Brooks et al, the motivation being the ability for both the mobile station and the base station to monitor the call (Brooks et al, page 2, paragraph 21).

Referring to **claim 3**, Veerasamy et al disclose the method of claim 1, further comprising storing the call-drop location in a network entity (page 4, paragraph 46, transfer position data to RF coverage server).

Referring to **claim 10**, Veerasamy et al disclose the method of claim 1, wherein making the determination that the call in which the mobile station was engaged has been dropped comprises the base station determining that the call cannot be handed off to another cell-site (page 3, paragraph 33, drop, it is inherent that when a call is dropped handoff can not take place).

Referring to **claim 21**, Veerasamy et al disclose a system comprising: a mobile station (page 2, paragraph 24, mobile stations); a base station communicatively coupled to the mobile station (page 2, paragraph 24, mobile stations, base stations); wherein the mobile station is arranged to engage in a call over an air interface, and wherein (i) make a determination that the call in which the mobile station was engaged has been dropped (page 3, paragraph 33, drop), (ii) base station arranged to responsively cause position determining equipment (PDE) to determine a call-drop location of the mobile station (page 5, paragraph 61, BS transmits control message with REPORT CALL DROP; page 3, paragraph 34, mobile station equipped with GPS). Veerasamy et al do not disclose that the base station is arranged to make a determination that the call in which the mobile station was engaged has been dropped. The examiner maintains that the concept that the base station is arranged to make a determination that the call in which the mobile station was engaged has been dropped was well known in the art as taught by Brooks et al.

In a similar field of endeavor, Brooks et al show that the base station can determine that a call was dropped (page 2, paragraph 21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show a system comprising: a mobile station; a base station communicatively coupled to the mobile station; wherein the mobile station is arranged to

Art Unit: 2686

engage in a call over an air interface, and wherein the base station is arranged to: (i) make a determination that the call in which the mobile station was engaged has been dropped, (ii) responsively cause position determining equipment (PDE) to determine a call-drop location of the mobile station, as taught by Brooks et al, the motivation being the ability for both the mobile station and the base station to monitor the call (Brooks et al, page 2, paragraph 21).

Referring to **claim 25**, Veerasamy et al disclose the system of claim 21, wherein the network entity comprises memory; and wherein the network entity is further arranged to store the call-drop location in the memory to thereby log locations of call drop events (page 3, paragraph 35, RF coverage server builds up a database of service drop/call position information).

Referring to **claim 26**, Veerasamy et al disclose the system of claim 21, wherein the network entity being arranged to make the determination that the call in which the mobile station was engaged has been dropped comprises the network entity being arranged to make the determination that the call cannot be handed off to another a cell-site (page 3, paragraph 33, drop, it is inherent that when a call is dropped handoff can not take place).

Referring to **claim 28**, Veerasamy et al disclose a base station comprising: a first routine to make a determination that a call in which a mobile station was engaged has been dropped (page 3, paragraph 33, drop); and a second routine to responsively cause position determining equipment (PDE) to determine a call-drop location of the mobile station (page 3, paragraph 34, call drop position; GPS).

4. Claims 9 and 23-24 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. App. Pub. No. 2004/0203855 to Veerasamy et al, in view of U.S. Pat. No. 6343216 to Kim et al.

Referring to **claim 9**, Veerasamy et al disclose the method of claim 1, for making the determination that the call in which the mobile station was engaged has been dropped (page 3, paragraph 33, drop). Veerasamy et al do not disclose determining, at the base station, that a duration of bad frames received from the mobile station is greater than a threshold level.

However, Kim et al disclose ways in which an MS and a BS detect a call drop (col 4, lines 35-40). A call drop is declared if a predetermined number of consecutive bad frames are received (col 4 line 62 – col 5 line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show making the determination that the call in which the mobile station was engaged has been dropped comprising determining, at the base station, that a duration of bad frames received from the mobile station is greater than a threshold level, as taught by Kim et al, the motivation being detecting a call drop and notifying the MS user regarding reconnection (Kim et al, col 5, lines 24-26).

Referring to **claim 23**, Veerasamy et al disclose making the determination that the call in which the mobile station was engaged has been dropped (page 3, paragraph 33, drop). Veerasamy et al do not disclose that the network entity is arranged to make the determination that a duration of bad frames received from the base station is greater than a threshold level.

However, Kim et al disclose ways in which an MS and a BS detect a call drop (col 4, lines 35-40). A call drop is declared if a predetermined number of consecutive bad frames are received (col 4 line 62 – col 5 line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show the network entity being arranged to make the

Art Unit: 2686

determination that the call in which the mobile station was engaged has been dropped comprises the network entity being arranged to make the determination that a duration of bad frames received from the mobile station is greater than a threshold level, as taught by Kim et al, the motivation being detecting a call drop and notifying the MS user regarding reconnection (Kim et al, col 5, lines 24-26).

Referring to **claim 24**, Veerasamy et al disclose the system of claim 21 (page 3, paragraph 33, drop). Veerasamy et al do not disclose that the threshold level is twenty bad frames.

However, Kim et al disclose a call drop if 80 consecutive bad frames are received (col 4 line 62 – col 5 line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show that the threshold level is twenty bad frames, as taught by Kim et al, the motivation being detecting a call drop and notifying the MS user regarding reconnection (Kim et al, col 5, lines 24-26).

5. Claim 29 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. App. Pub. No. 2004/0203855 to Veerasamy et al, in view of U.S. Pat. App. Pub. No. 2002/0090947 to Brooks et al., and further in view of U.S. Pat. App. Pub. No. 2002/0042260 to Saucedo et al.

Referring to **claim 29**, Veerasamy et al disclose a mobile station; a base station communicatively coupled to the mobile station; wherein the mobile station is arranged to engage in a call over an air interface (page 2, paragraph 24, mobile stations, base stations); wherein (i) make a determination that the call in which the mobile station was engaged has been dropped (page 3, paragraph 33, drop), (ii) responsively cause position determining equipment (PDE) to

determine a call-drop location of the mobile station (page 3, paragraph 34, call drop position, mobile station equipped with GPS). Veerasamy et al do not disclose that the base station makes a determination that the call has been dropped; and sending a location request to a mobile switching center (MSC), the location request including an ID identifying the mobile station; the MSC sending a position request to a mobile positioning center (MPC); the MPC forwarding the position request to the PDE; and the PDE responsively determining the location of the mobile station. The examiner maintains that the concept that the base station makes a determination that the call has been dropped; and sending a location request to a mobile switching center (MSC), the location request including an ID identifying the mobile station; the MSC sending a position request to a mobile positioning center (MPC); the MPC forwarding the position request to the PDE; and the PDE responsively determining the location of the mobile station was well known in the art as taught by Brooks et al and Saucedo et al.

In a similar field of endeavor, Brooks et al show that the base station can determine that a call was dropped (Brooks et al, page 2, paragraph 21). Saucedo et al show the MSC requesting the position from the MPC and the MPC relaying the position request to the PDE (Saucedo et al, page 3, paragraph 26).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show a mobile station, a base station communicatively coupled to the mobile station; wherein the mobile station is arranged to engage in a call over an air interface; and wherein the base station is arranged to: (i) make a determination that the call in which the mobile station was engaged has been dropped; (ii) responsively cause position determining equipment (PDE) to determine a call-drop location of the mobile station by: sending

Art Unit: 2686

a location request to a mobile switching center (MSC), the location request including an ID identifying the mobile station; the MSC sending a position request to a mobile positioning center (MPC); the MPC forwarding the position request to the PDE; and the PDE responsively determining the location of the mobile station, as taught by Brooks et al and Saucedo et al, the motivation being the ability for both the mobile station and the base station to monitor the call (Brooks et al, page 2, paragraph 21) and providing accurate location information with minimal messaging (Saucedo et al, page 1, paragraph 7).

Response to Arguments

6. Applicant's arguments with respect to claims 1, 3, 9, 10, 21, 23-26, 28 and 29 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2686

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suhail Khan whose telephone number is (571) 272-7910. The examiner can normally be reached on M-F from 8 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached at (571) 272-7905.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sk


CHARLES APPIAH
PRIMARY EXAMINER